WHAT IS CLAIMED IS:

1. A process for preparing a water-soluble pesticidal composition comprising a water-soluble salt of glyphosate acid and a dicarboxylate component, the process comprising:

adding a glyphosate component comprising particulate glyphosate acid, a base component, water and optionally an adjuvant component to a reactor thereby causing a reaction of glyphosate acid and the base component to form a reaction mass comprising the water-soluble salt of glyphosate acid; and

adding a dicarboxylate component to the reactor.

2. The process of claim 1 wherein the glyphosate component and at least a portion of the water are added to the reactor in the form of glyphosate acid wet cake.

3. The process of claim 2 wherein the dicarboxylate component is pre-mixed with the glyphosate acid wet cake prior to being added to the reactor.

4. The process of claim 1 wherein the base component is added to the reactor as a liquid.

5. The process of claim 1 wherein the base component is added to the reactor as a gas.

6. The process of claim 1 wherein the base component is selected from the group consisting of alkali metal hydroxides, alkaline earth metal hydroxides, carbonates of alkali metals, carbonates of alkaline earth metals, alkali metal phosphates, ammonium phosphates, ammonia, ammonium carbonate, ammonium bicarbonate, ammonium hydroxide and mixtures thereof.

7. The process of claim 6 wherein the base component is selected from the group consisting of sodium hydroxide, potassium hydroxide, magnesium hydroxide,

calcium hydroxide, sodium carbonate, sodium bicarbonate, sodium phosphate, disodium phosphate, trisodium phosphate, potassium phosphate, ammonium phosphates, ammonia, ammonium carbonate, ammonium bicarbonate, ammonium hydroxide and mixtures thereof.

8. The process of claim 7 wherein the base component is ammonia such that the water-soluble salt of glyphosate acid in the reaction mass is ammonium glyphosate.

9. The process of claim 7 wherein the base component is potassium hydroxide such that the water-soluble salt of glyphosate acid in the reaction mass is potassium glyphosate.

10. The process of claim 7 wherein the base component is sodium hydroxide such that the water-soluble salt of glyphosate acid in the reaction mass is sodium glyphosate.

11. The process of claim 1 wherein the molar ratio of the base component to glyphosate acid added to the reactor is from about 0.8 to about 1.25.

12. The process of claim 11 wherein the molar ratio of the base component to glyphosate acid added to the reactor is from about 0.9 to about 1.1.

13. The process of claim 11 wherein the molar ratio of the base component to glyphosate acid added to the reactor is from about 0.95 to about 1.05.

14. The process of claim 1 wherein the dicarboxylate component added to the reactor is selected from the group consisting of dicarboxylic acids, salts of dicarboxylic acids, anhydrides of dicarboxylic acids, esters of dicarboxylic acids, amides of dicarboxylic acids, halides of dicarboxylic acids, precursors of dicarboxylic acids and mixtures thereof.

15. The process of claim 14 wherein the dicarboxylate component added to the reactor comprises a salt of a dicarboxylic acid.

16. The process of claim 14 wherein the dicarboxylate component added to the reactor comprises a salt of a dicarboxylic acid selected from the group consisting of alkali metal salts of dicarboxylic acids, alkanolamine salts of dicarboxylic acids, alkylamine salts of dicarboxylic acids and mixtures thereof.

17. The process of claim 14 wherein the dicarboxylate component added to the reactor comprises a salt of a dicarboxylic acid selected from the group consisting of sodium salts of dicarboxylic acids, potassium salts of dicarboxylic acids, isopropylamine salts of dicarboxylic acids and mixtures thereof.

18. The process of claim 14 wherein the dicarboxylate component added to the reactor comprises a dicarboxylic acid, the dicarboxylic acid reacting with the base component to form a salt of the dicarboxylic acid in the reaction mass, the dicarboxylate component of the pesticidal composition comprising the salt of the dicarboxylic acid formed in the reaction mass.

19. The process of claim 18 wherein the dicarboxylate component added to the reactor comprises a dicarboxylic acid selected from the group consisting of oxalic acid, malonic acid, succinic acid, malic acid, tartaric acid, fumaric acid, maleic acid, glutaric acid, dimethylglutaric acid, adipic acid, trimethyladipic acid, pimelic acid, tartronic acid, suberic acid, azelaic acid, sebacic acid, 1,12-dodecanedioic acid, 1,13-tridecanedioic acid, glutamic acid, phthalic acid, isophthalic acid, terephthalic acid and mixtures thereof.

20. The process of claim 19 wherein the dicarboxylate component added to the reactor comprises oxalic acid.

21. The process of claim 14 wherein the dicarboxylate component added to the reactor is selected from the group consisting of salts of oxalic acid, esters of oxalic acid and mixtures thereof.

22. The process of claim 14 wherein the dicarboxylate component added to the reactor comprises a salt of oxalic acid selected from the group consisting of alkali metal salts of oxalic acid, ammonium salts of oxalic acid, alkanolamine salts of oxalic acid, alkylamine salts of oxalic acid and mixtures thereof.

23. The process of claim 14 wherein the dicarboxylate component added to the reactor comprises a salt of oxalic acid selected from the group consisting of potassium oxalate, di-potassium oxalate, sodium oxalate, di-sodium oxalate, ammonium oxalate, di-ammonium oxalate, diethanolamine oxalate, dimethylamine oxalate and mixtures thereof.

24. The process of claim 1 wherein an adjuvant component is added to the reactor.

25. The process of claim 24 wherein the adjuvant component added to the reactor is selected from the group consisting a surfactant component, anti-foaming agent, filler, humectant, symptomatology agent, desiccant, lubricant, scavenger and mixtures thereof.

26. The process of claim 25 wherein the adjuvant component added to the reactor comprises a surfactant component selected from the group consisting of nonionic surfactants, cationic surfactants, anionic surfactants, amphoteric surfactants, silicone surfactants, fluorocarbon surfactants and mixtures thereof.

27. The process of claim 26 wherein the surfactant component added to the reactor comprises a cationic surfactant.

28. The process of claim 26 wherein the surfactant component added to the reactor comprises an amphoteric surfactant.

29. The process of claim 26 wherein the surfactant component added to the reactor comprises a nonionic surfactant.

30. The process of claim 29 wherein the surfactant component added to the reactor comprises is selected from the group consisting of alkyl polyglycosides (APGs), polyoxyethylene C_{16-22} alkylethers and mixtures thereof.

31. The process of claim 1 wherein the total amount of water added to the reactor is at least about 2% by weight of all of the glyphosate component, dicarboxylate component, base component, water and adjuvant component added to the reactor.

32. The process of claim 31 wherein the total amount of water added to the reactor is from about 2% to about 40% by weight of all of the glyphosate component, dicarboxylate component, base component, water and adjuvant component added to the reactor.

33. The process of claim 32 wherein the total amount of water added to the reactor is from about 2% to about 25% by weight of all of the glyphosate component, dicarboxylate component, base component, water and adjuvant component added to the reactor.

34. The process of claim 33 further comprising reducing the moisture content of the reaction mass.

35. The process of claim 34 wherein the reaction between the particulate glyphosate acid and the base component generates heat causing partial evaporation of the water from the reaction mass.

36. The process of claim 35 wherein the temperature of the reaction mass is from about 70°C to about 105°C.

37. The process of claim 35 wherein the moisture content of the reaction mass is reduced to form a paste containing the water-soluble salt of glyphosate acid, the paste having a moisture content of from about 2% to about 20% by weight.

38. The process of claim 37 wherein the paste formed has a moisture content of from about 2% to about 18% by weight.

39. The process of claim 37 wherein the paste formed has a moisture content of from about 2% to about 15% by weight.

40. The process of claim 37 wherein the paste formed has a moisture content of from about 2% to about 10% by weight.

41. The process of claim 37 wherein the paste formed has a moisture content of from about 2% to about 5% by weight.

42. The process of claim 37 wherein the paste formed has a moisture content of from about 3% to about 5% by weight.

43. The process of claim 37 wherein the pH of the paste formed is from about 3 to about 6.

44. The process of claim 37 wherein the pH of the paste formed is from about 3.5 to about 4.5.

45. The process of claim 37 further comprising discharging the paste from the reactor, the paste discharged from the reactor comprising the water-soluble salt of glyphosate acid and the dicarboxylate component.

46. The process of claim 45 wherein additional dicarboxylate component is added to the paste discharged from the reactor.

47. The process of claim 45 wherein an adjuvant component is added to the paste discharged from the reactor.

48. The process of claim 47 wherein the adjuvant component added to the paste discharged from the reactor is selected from the group consisting a surfactant component, anti-foaming agent, filler, humectant, symptomatology agent, desiccant, lubricant, scavenger and mixtures thereof.

49. The process of claim 47 wherein the adjuvant component added to the paste discharged from the reactor is a surfactant component, the paste discharged from the reactor and the surfactant component forming an extrudable paste mixture, the surfactant component selected from the group consisting of nonionic surfactants, cationic surfactants, anionic surfactants, amphoteric surfactants, silicone surfactants, fluorocarbon surfactants and mixtures thereof.

50. The process of claim 49 wherein the surfactant component added to the paste discharged from the reactor comprises a cationic surfactant.

51. The process of claim 49 wherein the surfactant component added to the paste discharged from the reactor comprises an amphoteric surfactant.

52. The process of claim 49 wherein the surfactant component added to the paste discharged from the reactor comprises a nonionic surfactant.

53. The process of claim 52 wherein the surfactant component added to the paste discharged from the reactor comprises is selected from the group consisting of alkyl polyglycosides (APGs), polyoxyethylene C_{16-22} alkylethers and mixtures thereof.

54. The process of claim 49 further comprising feeding the extrudable paste mixture comprising the paste discharged from the reactor and the surfactant component to an extruder having a screen through which the extrudable paste mixture is extruded to form the water-soluble pesticidal composition in the form of extrudate strands comprising the water-soluble salt of glyphosate acid and the dicarboxylate component.

55. The process of claim 49 wherein an adjuvant component is added to the reactor.

56. The process of claim 49 wherein the adjuvant component is added to the reactor and/or to the paste discharged from the reactor in an amount such that the weight ratio of total adjuvant to the water-soluble salt of glyphosate is from about 1:20 to about 1:2 on an acid equivalent basis.

57. The process of claim 31 wherein the total amount of water added to the reactor is at least about 40% by weight of all of the glyphosate component, dicarboxylate component, base component, water and adjuvant component added to the reactor and the reaction mass formed is a slurry or solution comprising the water-soluble salt of glyphosate acid and the dicarboxylate component.

58. The process of claim 57 wherein the reaction mass further comprises an adjuvant component.

59. The process of claim 57 further comprising reducing the moisture content of the reaction mass to less than about 2% by weight to form a dry water-soluble pesticidal composition comprising the water-soluble salt of glyphosate acid and the dicarboxylate component.

60. The process of claim 59 further comprising pan granulating the reaction mass to form a dry granular pesticidal composition.

61. The process of claim 59 further comprising spray drying the reaction mass to form a dry particulate pesticidal composition.

62. The process of claim 59 further comprising:

drying the reaction mass by contacting the reaction mass with a heated surface to form a solid deposit on the heated surface; and

scraping the solid deposit off the heated surface to produce a dry pesticidal flake composition.

63. A process for preparing a water-soluble pesticidal composition comprising a water-soluble salt of glyphosate acid and a dicarboxylate component, the process comprising:

adding a glyphosate component comprising particulate glyphosate acid, a base component, water and optionally an adjuvant component to a reactor thereby causing a reaction of glyphosate acid and the base component to form a reaction mass comprising the water-soluble salt of glyphosate acid;

reducing the moisture content of the reaction mass using the heat generated by the reaction between the particulate glyphosate acid and the base component to cause partial evaporation of the water from the reaction mass and form a paste containing the water-soluble salt of glyphosate acid, the paste having a moisture content of from about 2% to about 20% by weight; and

adding a dicarboxylate component to the reaction mass and/or to the paste.

64. A process for preparing a dry water-soluble pesticidal composition comprising one or more water-soluble salts of glyphosate acid and a dicarboxylate component, the process comprising mixing a glyphosate component comprising one or more water-soluble salts of glyphosate acid and a dicarboxylate component to form a dry pesticidal composition comprising one or more water-soluble salts of glyphosate acid and the dicarboxylate component wherein the glyphosate component optionally contains sources of glyphosate other than the water-soluble

salts of glyphosate acid provided that at least about 50% by weight a.e. of the glyphosate component is one or more water-soluble salts of glyphosate acid.

65. The process of claim 64 wherein at least about 75% by weight a.e. of the glyphosate component is one or more water-soluble salts of glyphosate acid.

66. The process of claim 64 wherein at least about 90% by weight a.e. of the glyphosate component is one or more water-soluble salts of glyphosate acid.

67. The process of claim 64 wherein the glyphosate component consists essentially of one or more water-soluble salts of glyphosate acid.

68. The process of claim 66 wherein the glyphosate component comprises one or more water-soluble salts of glyphosate acid selected from the group consisting of ammonium salts of glyphosate acid, alkali metal salts of glyphosate acid, alkaline earth metal salts of glyphosate acid and alkylamine salts of glyphosate acid.

69. The process of claim 68 wherein the glyphosate component comprises one or more water-soluble salts of glyphosate acid selected from the group consisting of ammonium salts of glyphosate acid, sodium salts of glyphosate acid, potassium salts of glyphosate acid and isopropylamine salts of glyphosate acid.

70. The process of claim 66 wherein the glyphosate component mixed with the dicarboxylate component is present in a paste.

71. The process of claim 68 wherein the dicarboxylate component is selected from the group consisting of dicarboxylic acids, salts of dicarboxylic acids, anhydrides of dicarboxylic acids, esters of dicarboxylic acids, amides of dicarboxylic acids, halides of dicarboxylic acids, precursors of dicarboxylic acids and mixtures thereof.

72. The process of claim 71 wherein the dicarboxylate component comprises a salt of a dicarboxylic acid.

73. The process of claim 71 wherein the dicarboxylate component comprises a salt of a dicarboxylic acid selected from the group consisting of alkali metal salts of dicarboxylic acids, alkanolamine salts of dicarboxylic acids, alkylamine salts of dicarboxylic acids and mixtures thereof.

74. The process of claim 71 wherein the dicarboxylate component comprises a salt of a dicarboxylic acid selected from the group consisting of sodium salts of dicarboxylic acids, potassium salts of dicarboxylic acids, isopropylamine salts of dicarboxylic acids and mixtures thereof.

75. The process of claim 71 wherein the dicarboxylate component comprises a dicarboxylic acid.

76. The process of claim 71 wherein the dicarboxylate component comprises a dicarboxylic acid selected from the group consisting of oxalic acid, malonic acid, succinic acid, malic acid, tartaric acid, fumaric acid, maleic acid, glutaric acid, dimethylglutaric acid, adipic acid, trimethyladipic acid, pimelic acid, tartronic acid, suberic acid, azelaic acid, sebacic acid, 1,12-dodecanedioic acid, 1,13-tridecanedioic acid, glutamic acid, phthalic acid, isophthalic acid, terephthalic acid and mixtures thereof.

77. The process of claim 71 wherein the dicarboxylate component comprises oxalic acid.

78. The process of claim 71 wherein the dicarboxylate component is selected from the group consisting of salts of oxalic acid, esters of oxalic acid and mixtures thereof.

79. The process of claim 71 wherein the dicarboxylate component comprises a salt of oxalic acid selected from the group consisting of alkali metal salts of oxalic acid, ammonium salts of oxalic acid, alkanolamine salts of oxalic acid, alkylamine salts of oxalic acid and mixtures thereof.

80. The process of claim 71 wherein the dicarboxylate component comprises a salt of oxalic acid selected from the group consisting of potassium oxalate, di-potassium oxalate, sodium oxalate, di-sodium oxalate, ammonium oxalate, di-ammonium oxalate, diethanolamine oxalate, dimethylamine oxalate and mixtures thereof.

81. The process of claim 71 further comprising mixing an adjuvant component with the glyphosate component and the dicarboxylate component such that the dry pesticidal composition comprises one or more water-soluble salts of glyphosate acid, the dicarboxylate component and the adjuvant component.

82. The process of claim 81 wherein the adjuvant component comprises a surfactant component, the surfactant component selected from the group consisting of nonionic surfactants, cationic surfactants, anionic surfactants, amphoteric surfactants, silicone surfactants, fluorocarbon surfactants and mixtures thereof.

83. The process of claim 82 wherein the concentration of the adjuvant component in the dry pesticidal composition is from about 5% to about 50% by weight.

84. The process of claim 82 wherein the concentration of the adjuvant component in the dry pesticidal composition is from about 5% to about 25% by weight.

85. The process of claim 82 wherein the weight ratio of adjuvant component to the glyphosate component is at least about 1:500.

86. The process of claim 82 wherein the weight ratio of adjuvant component to glyphosate component is from about 1:20 to about 1:2.

87. The process of claim 71 further comprising mixing an adjuvant component and optionally water with the glyphosate component and the dicarboxylate component to form an extrudable mixture comprising the glyphosate component, the dicarboxylate component, the adjuvant component and optionally water and extruding the extrudable mixture to form the dry pesticidal composition in the form of granules.

88. A process for preparing a pesticide enhancer composition comprising a salt of a dicarboxylic acid and a surfactant component, the process comprising:

combining a dicarboxylate component comprising the dicarboxylic acid, a base component and a surfactant component in a reactor thereby causing the reaction between the dicarboxylic acid and the base component and forming the enhancer composition comprising the salt of the dicarboxylic acid and the surfactant component.

89. The process of claim 88 wherein the dicarboxylate component comprises a dicarboxylic acid selected from the group consisting of oxalic acid, malonic acid, succinic acid, malic acid, tartaric acid, fumaric acid, maleic acid, glutaric acid, dimethylglutaric acid, adipic acid, trimethyladipic acid, pimelic acid, tartronic acid, suberic acid, azelaic acid, sebacic acid, 1,12-dodecanedioic acid, 1,13-tridecanedioic acid, glutamic acid, phthalic acid, isophthalic acid, terephthalic acid and mixtures thereof.

90. The process of claim 88 wherein the dicarboxylate component comprises oxalic acid.

91. The process of claim 88 further comprising adding a filler component to the reactor.

92. The process of claim 88 wherein the concentration of the salt of the dicarboxylic acid in the enhancer composition is from about 34% to about 90% by weight a.e.

93. The process of claim 92 wherein the concentration of the surfactant in the enhancer composition is from about 5% to about 50% by weight.

94. The process of claim 92 further comprising adding a filler component to the reactor.

95. The process of claim 94 wherein the concentration of the filler in the enhancer composition is no greater than about 34% by weight.

96. The process of claim 95 wherein the concentration of the filler in the enhancer composition is from about 5% to about 10% by weight.

97. The process of claim 88 wherein the concentration of the salt of the dicarboxylic acid in the enhancer composition is from about 70% to about 90% by weight a.e.

98. The process of claim 97 wherein the concentration of the surfactant in the enhancer composition is from about 5% to about 50% by weight.

99. The process of claim 97 wherein the concentration of the surfactant in the enhancer composition is from about 5% to about 20% by weight.

100. The process of claim 99 further comprising adding a filler component to the reactor.

101. The process of claim 100 wherein the concentration of filler in the enhancer composition is from about 5% to about 10% by weight.